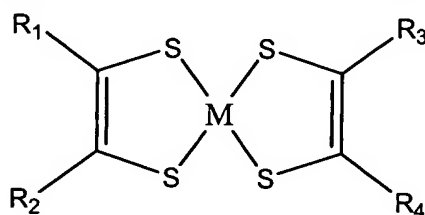


***Amendments to the Claims:***

The listing of claims will replace all prior versions, and listings, of claims in the above-captioned application.

Please cancel claims 40-59, 61-80, and 82-101 without prejudice.

1. (Original) A fluid separation membrane for separating one or more components from a fluid, the fluid comprising two or more components, wherein the fluid separation membrane comprises at least one polymer and at least one dithiolene having the structure:



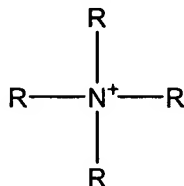
where M is a metal, wherein R<sub>1</sub>, R<sub>2</sub>, R<sub>3</sub>, and R<sub>4</sub> are each independently alkyl, CH<sub>3</sub>, CF<sub>3</sub>, C<sub>6</sub>H<sub>4</sub>OCH<sub>3</sub>, CN, or where R<sub>1</sub> and R<sub>2</sub> and/or R<sub>3</sub> and R<sub>4</sub> combine to form at least one ring.

2. (Original) The fluid separation membrane of claim 1, wherein the membrane exhibits an olefin/paraffin solubility selectivity.
3. (Original) The fluid separation membrane of claim 1, wherein the membrane exhibits an olefin/paraffin solubility selectivity of 1.1 to 2.0.
4. (Original) The fluid separation membrane of claim 1, wherein at least one dithiolene is resistant to poisoning by impurities.
5. (Original) The fluid separation membrane of claim 1, wherein the metal is Ni, Pd, or Pt.

6. (Original) The fluid separation membrane of claim 1, wherein at least one dithiolene further comprises a valence charge, and wherein the valence charge is 0, -1, or -2.

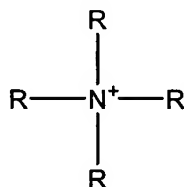
7. (Original) The fluid separation membrane of claim 1, wherein at least one dithiolene further comprises a valence charge, wherein the valence charge is -1 or -2, and wherein the dithiolene comprises a counter ion.

8. (Original) The fluid separation membrane of claim 1, wherein at least one dithiolene further comprises a valence charge, wherein the valence charge is -1 or -2, and wherein the dithiolene comprises at least one counter ion having the structure:



where each R is independently an alkyl or aromatic compound.

9. (Original) The fluid separation membrane of claim 1, wherein at least one dithiolene further comprises a valence charge, wherein the valence charge is -1 or -2, and wherein the dithiolene comprises at least one counter ion having the structure:



where each R is independently C<sub>2</sub>H<sub>5</sub> or C<sub>4</sub>H<sub>9</sub>.

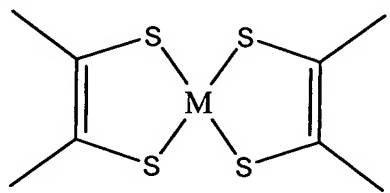
10. (Original) The fluid separation membrane of claim 1, wherein at least one dithiolene is capable of complexing with an olefin.

11. (Original) The fluid separation membrane of claim 1, wherein the fluid comprises a liquid.

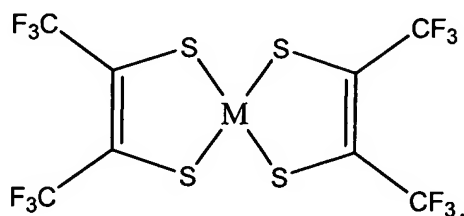
12. (Original) The fluid separation membrane of claim 1, wherein the fluid comprises a gas stream.

13. (Original) The fluid separation membrane of claim 1, wherein the fluid comprises a gas stream, and wherein the gas stream comprises a hydrocarbon.

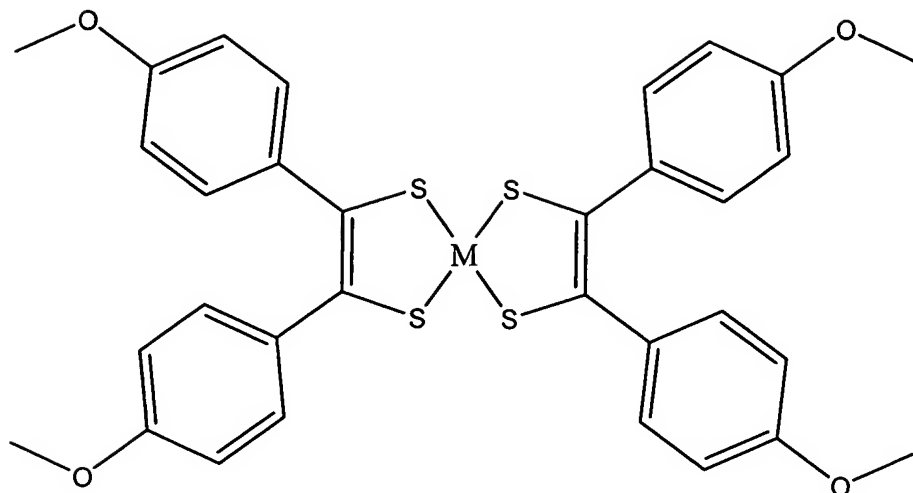
14. (Original) The fluid separation membrane of claim 1, wherein  $R_1$ ,  $R_2$ ,  $R_3$ , and  $R_4$  are  $\text{CH}_3$ , at least one dithiolene having the structure:



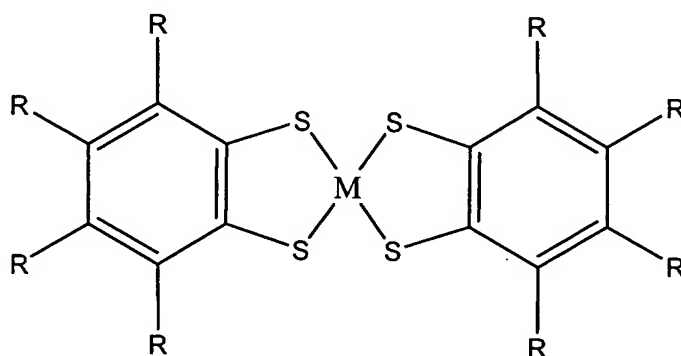
15. (Original) The fluid separation membrane of claim 1, wherein  $R_1$ ,  $R_2$ ,  $R_3$ , and  $R_4$  are  $\text{CF}_3$ , at least one dithiolene having the structure:



16. (Original) The fluid separation membrane of claim 1, wherein  $R_1$ ,  $R_2$ ,  $R_3$ , and  $R_4$  are  $\text{C}_6\text{H}_4\text{OCH}_3$ , at least one dithiolene having the structure:

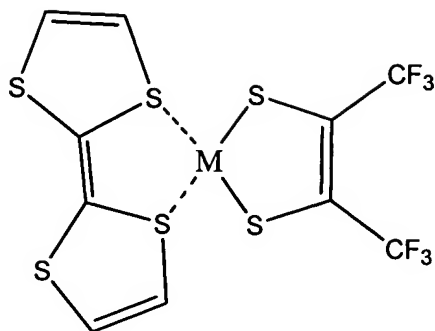


17. (Original) The fluid separation membrane of claim 1, wherein  $R_1$  and  $R_2$  combine to form  $C_6H_3CH_3$ , and wherein  $R_3$  and  $R_4$  combine to form  $C_6H_3CH_3$ , at least one dithiolene having the structure:

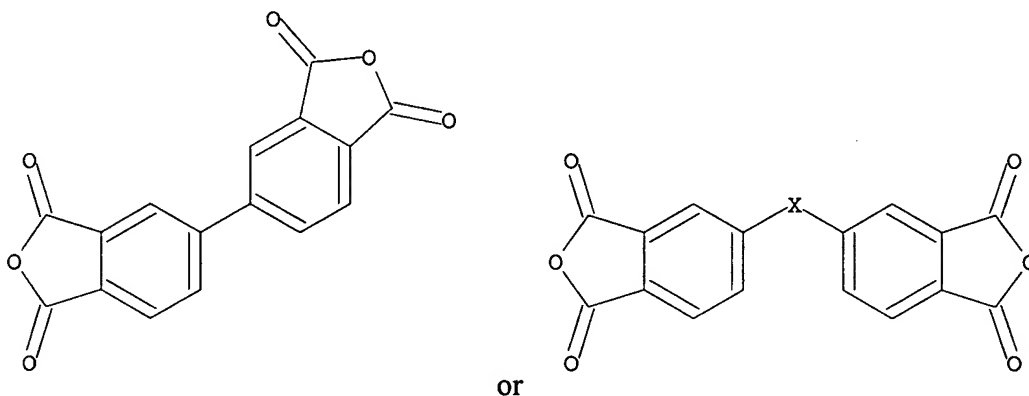


where each R is independently H,  $CH_3$ , alky, or aryl.

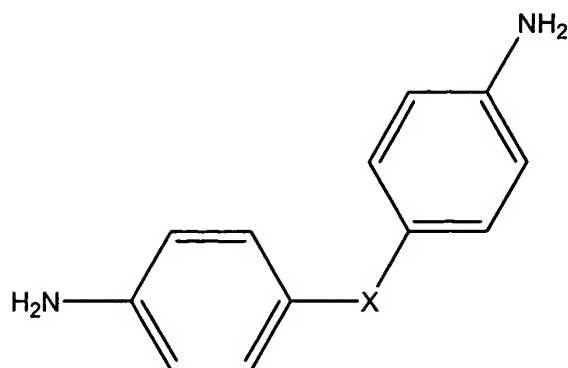
18. (Original) The fluid separation membrane of claim 1, wherein  $R_1$  and  $R_2$  combine to form  $C_6H_4S_4$ , and wherein  $R_3$  and  $R_4$  are  $CF_3$ , at least one dithiolene having the structure:



19. (Original) The fluid separation membrane of claim 1, wherein at least one polymer comprises the reaction product of a tetraacid compound and a diamine.
20. (Original) The fluid separation membrane of claim 1, wherein at least one polymer comprises the reaction product of a tetraacid compound and a diamine, wherein the tetraacid compound comprises an aromatic dianhydride having the structure:



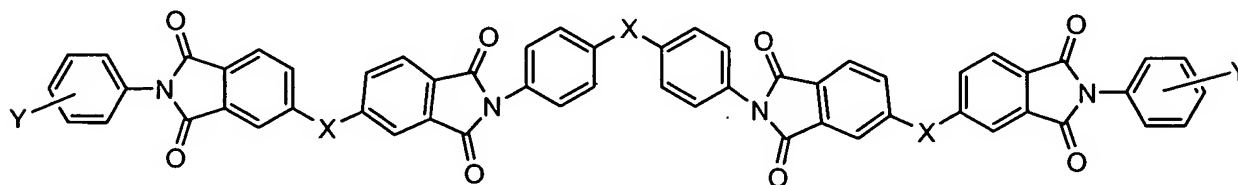
wherein the diamine having the structure:



and wherein each X is independently CH<sub>2</sub>, C(O), CH(CH<sub>3</sub>), C(CH<sub>3</sub>)<sub>2</sub>, C(CF<sub>3</sub>)<sub>2</sub>, C(CH<sub>3</sub>)Ph, C(Ph)<sub>2</sub>, or cyclohexyl.

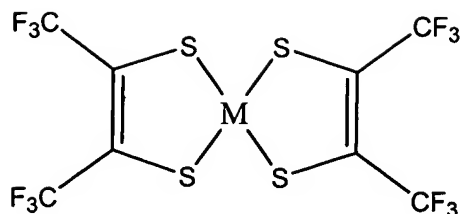
21. (Original) The fluid separation membrane of claim 1, wherein at least one polymer comprises a polyimide polymer, a polyamide polymer, a polypyrrolone polymer, or a poly (pyrrolone - imide) polymer.

22. (Original) The fluid separation membrane of claim 1, wherein at least one polymer comprises a polyimide polymer, wherein the polyimide polymer comprises recurring units, a portion of the recurring units having the structure:



where X is a linking group, and Y is another recurring unit, where recurring unit Y is coupled to the aromatic ring in an ortho, meta, or para relation to the imide group.

23. (Original) A fluid separation membrane for separating one or more components from a fluid, the fluid comprising two or more components, wherein the fluid separation membrane comprises at least one polymer and at least one dithiolene having the structure:



where M is a metal.

24. (Original) The fluid separation membrane of claim 23, wherein the membrane exhibits an olefin/paraffin solubility selectivity.

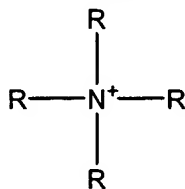
25. (Original) The fluid separation membrane of claim 23, wherein the membrane exhibits an olefin/paraffin solubility selectivity of 1.1 to 2.0.

26. (Original) The fluid separation membrane of claim 23, wherein the metal is Ni, Pd, or Pt.

27. (Original) The fluid separation membrane of claim 23, wherein at least one dithiolene further comprises a valence charge, and wherein the valence charge is 0, -1, or -2.

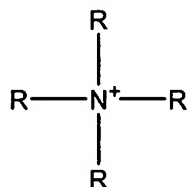
28. (Original) The fluid separation membrane of claim 23, wherein at least one dithiolene further comprises a valence charge, wherein the valence charge is -1 or -2, and wherein the dithiolene comprises a counter ion.

29. (Original) The fluid separation membrane of claim 23, wherein at least one dithiolene further comprises a valence charge, wherein the valence charge is -1 or -2, and wherein the dithiolene comprises at least one counter ion having the structure:



where each R is independently an alkyl or aromatic compound.

30. (Original) The fluid separation membrane of claim 23, wherein at least one dithiolene further comprises a valence charge, wherein the valence charge is -1 or -2, and wherein the dithiolene comprises at least one counter ion having the structure:



where each R is independently C<sub>2</sub>H<sub>5</sub> or C<sub>4</sub>H<sub>9</sub>.

31. (Original) The fluid separation membrane of claim 23, wherein at least one dithiolene is capable of complexing with an olefin.

32. (Original) The fluid separation membrane of claim 23, wherein the fluid comprises a liquid.

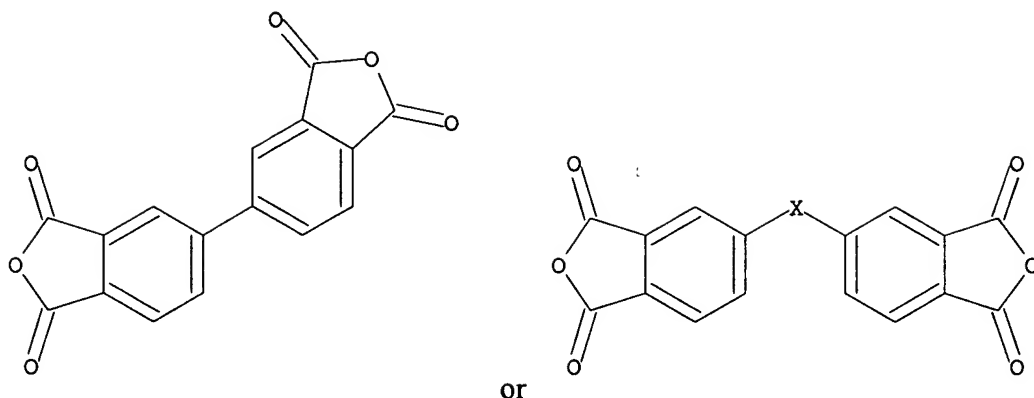
33. (Original) The fluid separation membrane of claim 23, wherein the fluid comprises a gas stream.

34. (Original) The fluid separation membrane of claim 23, wherein the fluid comprises a gas stream, and wherein the gas stream comprises a hydrocarbon.

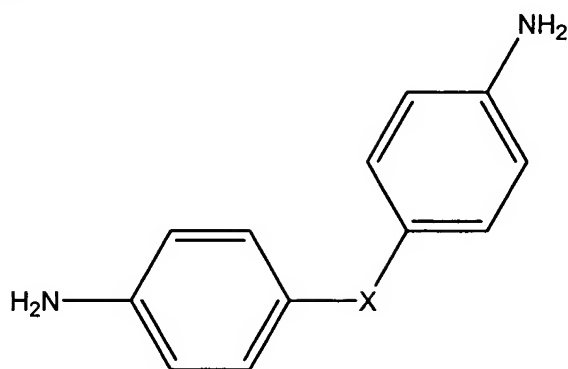
35. (Original) The fluid separation membrane of claim 23, wherein at least one polymer comprises the reaction product of a tetraacid compound and a diamine.

36. (Original) The fluid separation membrane of claim 23, wherein at least one polymer comprises the reaction product of a tetraacid compound and a diamine, wherein the tetraacid compound comprises an aromatic dianhydride having the structure:





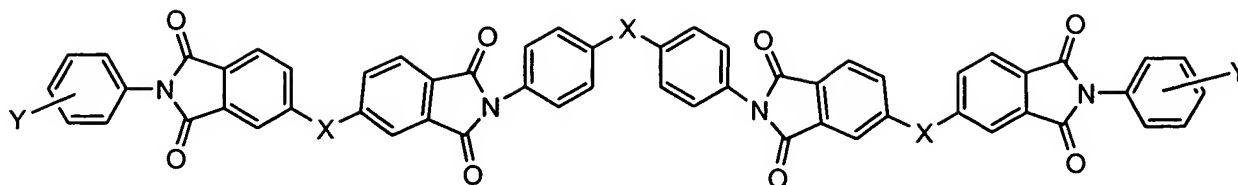
wherein the diamine having the structure:



and wherein each X is independently CH<sub>2</sub>, C(O), CH(CH<sub>3</sub>), C(CH<sub>3</sub>)<sub>2</sub>, C(CF<sub>3</sub>)<sub>2</sub>, C(CH<sub>3</sub>)Ph, C(Ph)<sub>2</sub>, or cyclohexyl.

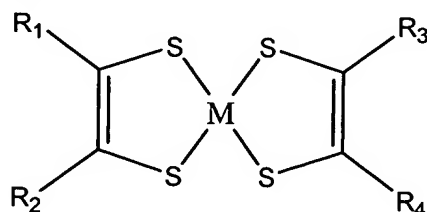
37. (Original) The fluid separation membrane of claim 23, wherein at least one polymer comprises a polyimide polymer, a polyamide polymer, a polypyrrolone polymer, or a poly (pyrrolone - imide) polymer.

38. (Original) The fluid separation membrane of claim 23, wherein at least one polymer comprises a polyimide polymer, wherein the polyimide polymer comprises recurring units, a portion of the recurring units having the structure:



where X is a linking group, and Y is another recurring unit, where recurring unit Y is coupled to the aromatic ring in an ortho, meta, or para relation to the imide group.

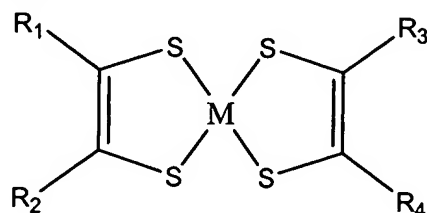
39. (Original) A method of preparing a fluid separation membrane for separating one or more components from a fluid, the fluid comprising two or more components, comprising adding at least one dithiolene to at least one polymer, the dithiolene having the structure:



where M is a metal, wherein R<sub>1</sub>, R<sub>2</sub>, R<sub>3</sub>, and R<sub>4</sub> are each independently alkyl, CH<sub>3</sub>, CF<sub>3</sub>, C<sub>6</sub>H<sub>4</sub>OCH<sub>3</sub>, CN, or where R<sub>1</sub> and R<sub>2</sub> and/or R<sub>3</sub> and R<sub>4</sub> combine to form at least one ring.

Claims 40-59. (Cancelled)

60. (Original) A method of separating one or more components from a fluid, the fluid comprising two or more components, comprising bringing the fluid stream into contact with a face of a fluid separation membrane, the fluid separation membrane comprising at least one polymer and at least one dithiolene having the structure:



where M is a metal, wherein R<sub>1</sub>, R<sub>2</sub>, R<sub>3</sub>, and R<sub>4</sub> are each independently alkyl, CH<sub>3</sub>, CF<sub>3</sub>,

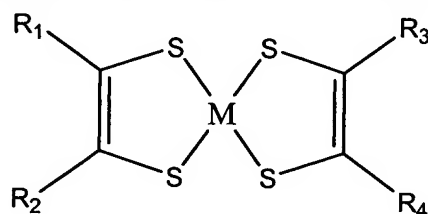
C<sub>6</sub>H<sub>4</sub>OCH<sub>3</sub>, CN, or where R<sub>1</sub> and R<sub>2</sub> and/or R<sub>3</sub> and R<sub>4</sub> combine to form at least one ring.

Claims 61-80. (Cancelled)

81. (Original) An apparatus for separating one or more components from a fluid, the fluid comprising two or more components, comprising:

a body;

a fluid separation membrane disposed within the body, the fluid separation membrane comprising at least one polymer and at least one dithiolene having the structure:



where M is a metal, wherein R<sub>1</sub>, R<sub>2</sub>, R<sub>3</sub>, and R<sub>4</sub> are each independently alkyl, CH<sub>3</sub>, CF<sub>3</sub>, C<sub>6</sub>H<sub>4</sub>OCH<sub>3</sub>, CN, or where R<sub>1</sub> and R<sub>2</sub> and/or R<sub>3</sub> and R<sub>4</sub> combine to form at least one ring;

a fluid stream inlet coupled to the body downstream from the fluid separation membrane;

a first fluid stream outlet positioned upstream from the fluid stream inlet and downstream from the fluid separation membrane; and

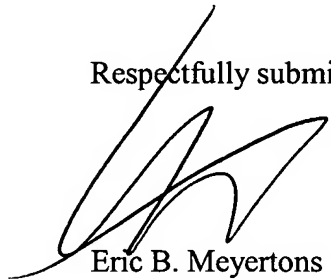
a second fluid stream outlet positioned downstream from the fluid separation membrane.

Claims 82-101 (Cancelled)

Koros, et al.  
10/824,772

It is believed that no fees are due in connection with the filing of this Preliminary Amendment. However, if any fees are due, the Commissioner is hereby authorized to deduct said fees from Meyertons, Hood, Kivlin, Kowert & Goetzel Deposit Account No. 50-1505/5119-12401/EBM.

Respectfully submitted,



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